

Health and Safety

# RESOURCE

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Brewery – doing  
the right thing** p. 6

**To encourage and assist:**

The surprising history of the voluntary approach to safety and health in Oregon p. 10

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## RESOURCE

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# The message remains: The work is important, and we can do better!

By Michael Wood

Over the past decade, the April issue of Resource – coming as it does a few weeks before Worker Memorial Day – has often led me to reflect on lives lost in Oregon workplaces. As I scan those past issues, I am repeatedly struck by how little the struggle against death in the workplace has changed in that time. In one sense, that's discouraging. The challenges remain the same, however strongly we feel about them. In another sense, however, it's encouraging, because we know what we must do. And there is a value in reminding ourselves of past commitments.

**From April 2009:** "The lives whose loss we commemorate this month were individuals, each with his or her own story. And the lives we saved yesterday, and last week, and last month – as well as those we will save tomorrow, and next week, and next year – are individual victories. We need to remember yesterday's failures, but we must also fight for tomorrow's victories."

**From April 2012:** "Whenever we talk about the data, and about rates, and about trends, and about statistical validity, we must never lose site of the reality behind all of those numbers: real people, with real stories, and real friends and family. And I am



Oregon OSHA Administrator

convinced that the work we do has made a difference for others just like them."

**From April 2014:** "What is missing when it comes to achieving the next real reduction in the death rates? I fear, in part, it is a lack of will. It is a belief that we are 'pretty good' at dealing with workplace risks. And it is a belief that 'pretty good' is good enough. As we approach Worker Memorial Day again this year, I ask you to join me in declaring that we can do better.

"We can celebrate our successes. But we must never rest upon them as though we have done all that we can do. Because we have not done what we can, or what we should. While we fool ourselves, our friends,

**"Whenever we talk about the data, and about rates, and about trends, and about statistical validity, we must never lose site of the reality behind all of those numbers: real people, with real stories, and real friends and family."**



our neighbors, our family members – someone will die. And we will shake our heads. We will wonder what can be done.

"The rallying cry for Worker Memorial Day each year is to mourn the dead and fight for the living. Perhaps we need to mourn a bit less – but fight a good bit harder!"

**From April 2015:** "As I have said before, any death in the workplace is a tragedy. It is a life cut short. It is a loss of dreams, of the future, and of a life of love and sharing. Whether those grieving such a death are family or are friends, they know that it was not, in fact, 'time.' It came too early.

"I would offer this reminder to all those who strive to address hazards that can cause injury, illness, and death in the workplace: As much as I feel the loss of my father, I know that the pain and tragedy is multiplied many times for those who lose a loved one in the workplace. And that is why we do what we do."

Each year, April is a reminder. The work matters. Because the lives we protect matter. And we can do better.

**Editor's note: The annual Worker Memorial Day ceremony is Thursday, April 28, in Salem.**



# Don't miss out



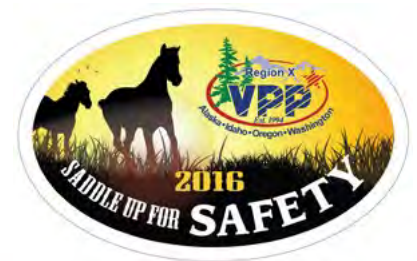
## Safety 24/7: Why Do You Work Safe?

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### Education: Upcoming April-May workshops —

<b>Accident Investigation</b>	Roseburg	4/28/16	1 p.m.
	Astoria	5/11/16	8 a.m.
<b>Fall Protection</b>	Milwaukie	5/26/16	1 p.m.
	Milwaukie	5/26/16	8 a.m.
<b>Forklift Safety</b>	Eugene	4/5/16	1 p.m.
	Klamath Falls	5/5/16	1 p.m.
<b>Safety Meetings and Committees</b>	Astoria	5/11/16	1 p.m.
	Eugene	4/5/16	8 a.m.
	Klamath Falls	5/5/16	8 a.m.
	Roseburg	4/28/16	8 a.m.



For more information: [www.orsosha.org/educate/pdf/schedule4.pdf](http://www.orsosha.org/educate/pdf/schedule4.pdf)  
To access the public education schedule for April-June 2016:  
[www.orsosha.org/educate/pdf/schedule1.pdf](http://www.orsosha.org/educate/pdf/schedule1.pdf)



Join worksites across Oregon and honor safety leaders, hold a training, or get a conversation started about safety and health.

**SAVE THE DATE!**  
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CELEBRATE SAFETY AND HEALTH  
AT YOUR WORKPLACE

[www.orsosha.org/subjects/safetybreak.html](http://www.orsosha.org/subjects/safetybreak.html)



# Did you know?



In 1989, the Oregon legislature proposed legislation that would require Oregon employers to establish safety and health programs but the bill died in committee.

- From 2009 to 2014, private sector employers requested more than 85 percent of the safety and health consultations provided by Oregon OSHA.

## datapoints:

- Number of Oregon companies participating in the *Voluntary Protection Program (VPP)*: **21**
- Number of Oregon companies (current participants and graduates) in the *Safety and Health Achievement Recognition Program (SHARP)*: **152**



- Employers who receive a consultation from Oregon OSHA also receive a 60-day exemption from a regularly scheduled enforcement visit (30 days for mobile sites and agricultural labor housing consultations). The purpose of the exemption is to give employers time to implement a consultant's recommendations.



A Division of the Department Consumer and Business Services

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# Deschutes Brewery — doing the right thing

## Maintaining effective safety and health management systems

By Aaron Corvin

Wearing a ball cap with safety glasses perched on the brim, Mike Jervis looks every bit the affable, easygoing connoisseur of craft beers that he is.

Listen to him talk about the health and safety of workers at Deschutes Brewery in Bend, where he serves as the company's safety director, and things get serious in a hurry.

"I'm a big advocate of doing it right the first time," he said.

That's evident everywhere you look inside the company's 16-acre complex, which delivered more than 340,000 barrels of beer to customers in 28 states last year. Everything from enclosed work spaces and a bulk de-palletizer to an industrial repair shop and a quality-control laboratory is tailored to serve health and safety first.

But Deschutes Brewery isn't going it alone in building a culture of doing the right thing. The company has frequently sought guidance from a part of Oregon OSHA that doesn't involve enforcement of rules and penalties, but that is nonetheless crucial to helping employers maintain effective safety and health management systems: consultation services.

Staffed by 32 experts, the program offers employers a variety of no-cost, confidential services, including safety, health, and ergonomic hazard assessments; recommendations to control and eliminate hazards; and hands-on training on health and safety topics. The program's ultimate goal is to help employers become self-sufficient in managing their safety and health systems.



During the consultation process, consultants will not issue citations or propose penalties for rule violations. The potential benefits include fewer accidents, lower injury and illness rates, decreased workers' compensation costs, and higher employee morale.

Oregon OSHA's consultants possess an array of experiences and knowledge from both the private and public sectors. They've built relationships with various industry groups, regulatory agencies, and professional organizations. And they're supported by Oregon OSHA's Technical Section, the Research Library and the nationally recognized Occupational Health Laboratory.

### **A strong partnership**

Since the mid-1990s, Deschutes Brewery has received a total of 20 visits by Oregon OSHA consultants – 14 for health reasons, five for safety, and one related to ergonomics.

During a recent tour of the company's production facilities, Jervis showed off several examples of the benefits of those visits.

Moving from room to room, Jervis pointed out groups of tanks and vats used to store yeast and boil water to brew beer. He described how workers sometimes enter those containers to perform maintenance work.



During a recent tour of Deschutes Brewery, Mike Jervis, the company's safety director, discussed the brewery's work to improve workplace safety and health.



*To request consultation services, go online, call 800-922-2689 (toll-free), send an email, or contact one of Oregon OSHA's field offices.*

*For more information, go to [www.orosha.org](http://www.orosha.org) and click on consultation services.*

Oregon OSHA consultants, he said, helped the company not only identify hazards posed by such confined spaces but also define procedures to gain the upper hand on those hazards.

At one point, Jervis led the tour to an industrial repair shop, where welders fix and reconstruct the stainless steel pipes and parts that help make the beer-brewing operation hum.

The welding work gives off toxic fumes. The company installed a flexible trunk-hose ventilation system to protect workers from the vapors. The company didn't stop there, though. It called on an Oregon OSHA health consultant to test the system's effectiveness. The consultant, Cory Stengel, found no cause for concern.

Next up on Jervis' tour was the company's laboratory, where workers handle various chemicals for quality-control testing. The lab features a hood-and-ventilation system with a protective sash that moves up and down like a window. The system is intended to keep chemical vapors away from workers.

But the company wanted to get a better handle on whether the system was doing its job, Jervis said.

Stengel took on that work, too. He evaluated the properties of the chemicals being handled, and used an air velocity meter to pinpoint where the sash should be located to make sure air was flowing properly for workers.

Stengel has conducted 13 of the 20 consultations that Deschutes Brewery has received from Oregon OSHA. He said the company's awareness of potential hazards, coupled with its willingness to team up with OSHA, has helped the brewery develop a strong health and safety culture.

That partnership continues today.

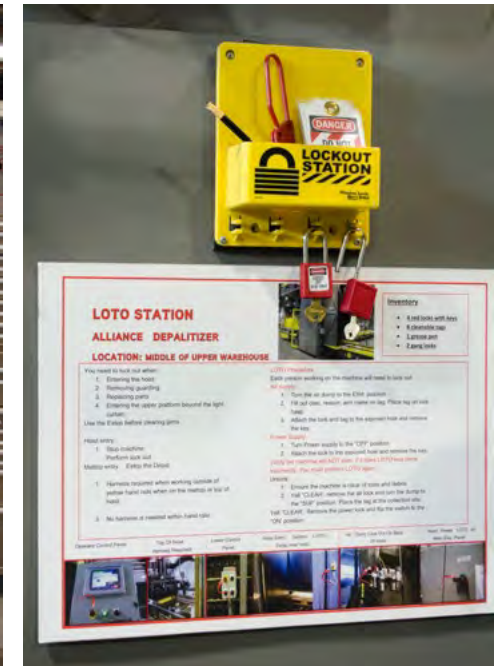
"They don't hesitate to call when they have a question," Stengel said. "Sometimes, it turns into a visit. Sometimes, it's advice over the phone."

Not only has Jervis used Oregon OSHA's services, but he's also attended many of the safety and health conferences in the region. Those include the Central Oregon Occupational Safety and Health Conference and the Governor's Occupational Safety and Health Conference. What's more, Jervis has taken what he's learned from these conferences and shared it with other breweries in the Pacific Northwest.

And Jervis, Stengel added, has "taken the safety baton and just ran with it."



**“ They don't hesitate to call when they have a question. Sometimes, it turns into a visit. Sometimes, it's advice over the phone.”**  
 — Cory Stengel



With help from Oregon OSHA, Deschutes Brewery has tested the effectiveness of ventilation systems and implemented a comprehensive lockout/tagout program to protect against hazardous energy releases.



**Program reaches many**

The advice given by Oregon OSHA’s consultation program reaches a broad audience.

From 2009 to 2014, the agency conducted 16,166 consultations, reaching an average 180,010 Oregon employees each year. Because consultation services are voluntary, the annual workload is driven by demand from employers.

At the employer’s request, a consultation may be comprehensive or address only a specific issue. Either way, Oregon OSHA’s consultation services receive high marks in customer service. More than 92 percent of employers surveyed in fiscal year 2014 rated their consultant as good or excellent.

Jervis said Deschutes Brewery’s decisions over the years to seek guidance from Oregon OSHA reflect the company’s open, team-oriented approach to making beer, where ideas flow and people work together to “stretch the concept of what beer is.”

“Our safety culture,” he added, “kind of does the same thing.” ■

“We have a team-oriented approach to making beer, where ideas flow and people work together to stretch the concept of what beer is. ...Our safety culture kind of does the same thing.”  
 — Mike Jervis





# To encourage and assist:

## The surprising history of the voluntary approach to safety and health in Oregon

By Ellis Brasch

When asked if they know what Oregon OSHA does, many will say that “OSHA” enforces safety regulations and writes citations. Of course, those answers are only partially correct. What most people do not know is that Oregon OSHA’s effort to encourage voluntary compliance has been as important as its enforcement program in shaping occupational safety and health in Oregon for more than seven decades.

In 1941, the Oregon Legislature, “seeing the need for accident prevention,” established the state’s first workplace safety agency, the **Accident Prevention Division**. But the organization lasted less than a year as “able bodied men” enlisted to join the armed forces and the state shifted priorities to gear up for the war effort. However, it soon became apparent that there was still a need for accident prevention “because of hazards in the war industry.” APD was reactivated in 1943 with a staff of 42 people, who worked in its education, engineering, and enforcement sections. Of those three E’s – education, engineering, and enforcement – education would shape much of APD’s activities well into the 1960s.

In 1962, Gov. Mark O. Hatfield reinforced the education message at the state’s 10th industrial safety conference when he said that that APD’s goal “is to accomplish its statewide safety program in a friendly and fair manner using the consultative approach, expanded educational activities, special industry programs, and emphasizing better public relations.”

Four years later, Oregon’s newly formed State Compensation Department – which would later become the State Accident Insurance Fund and then the SAIF Corporation – hired 23 safety consultants to conduct a “...safety survey of workplaces revealing the weak points and the strong points of a given firm’s safety program.” In touting the benefits of the survey, the department noted, “this consultative method...utilizes the best features of inspection, draws on the latest engineering and management theories, uses the most appropriate of education and promotional techniques, and blends them into a planned program based on specific conditions determined in advance by study and appraisal.”

“APD’s goal is to accomplish its statewide safety program in a friendly and fair manner using the consultative approach, expanded educational activities, special industry programs, and emphasizing better public relations.”

— Mark O. Hatfield, 1962



Mark O. Hatfield



The consultative approach received another boost in 1973 when the Oregon Legislature created the *Oregon Safe Employment Act* to “assure as far as possible safe and healthful working conditions for every working man and woman in Oregon...” Among the six numbered objectives that the legislature entrusted to APD, the first two were “*encourage* employers and employees to reduce the number of occupational safety and health hazards...” and “*establish* a coordinated program of worker and *employer education*, health and safety *consultative services*, demonstration projects and research to *assist* workers and their employers in preventing occupational injury and disease, whatever the cause.” (Italics added.)

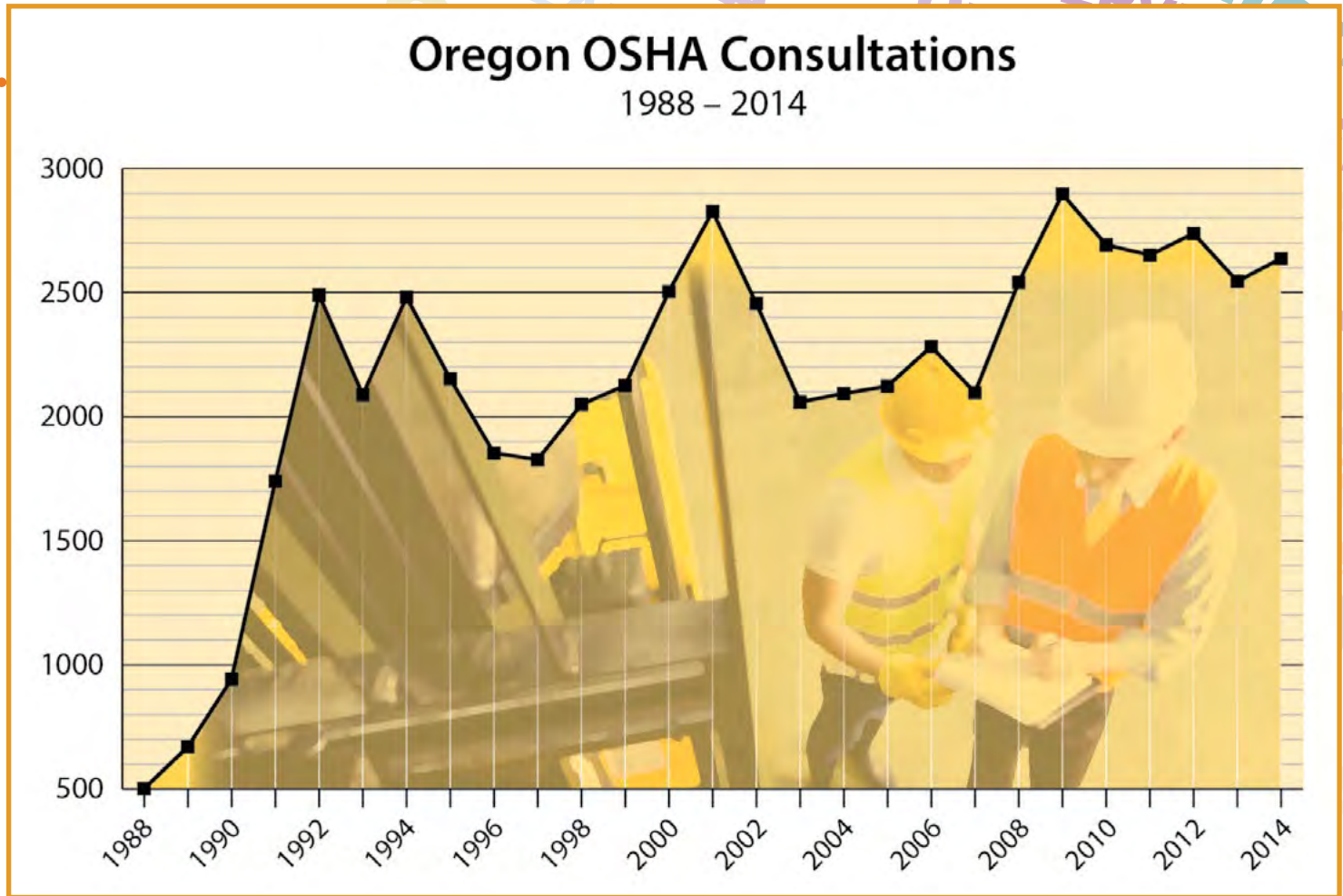
The Oregon Safe Employment Act was landmark legislation but its enforcement provisions assumed that an employer knew the rules and would comply with them before an inspector arrived. However, many employers did not know what hazards they had in their workplaces or what they needed to do to correct them. In an attempt to remedy the matter, APD advertised “free consultation services to

employers wanting to comply with work safety and health standards before the division’s enforcement people inspect [them].” The service was aimed primarily at business owners who employed fewer than 100 workers.

At the federal level, OSHA also recognized that the “interpretation of complex standards and the recognition of hazards in the workplace can be difficult for employers.” In response to the demand

**Above:** Oregon OSHA consultations rose from 500 in 1988 to 2,638 in 2014. (Source: DCBS, 2014 Report on the Oregon workers’ compensation system)

for consultations from states that did not have approved state plans, OSHA amended the OSHA Act in 1975 to allow federal funding of on-site consultation programs by states without approved state plans.





APD and federal OSHA now offered free consultation services, but there was still one untapped source of help for Oregon employers: workers' compensation carriers. In 1976, consultative services became mandatory for workers' compensation insurance carriers, too, when the Oregon Legislature passed a law that required carriers to provide the services to their policyholders. The legislation gave the state insurance commissioner the power to suspend or revoke the authority of carriers that did not provide the services.

Although APD offered consultative help to employers, it was still not mandatory as it was for insurance carriers. That changed in 1987 when the Oregon Legislature passed House Bill 2900, which focused on improving the state's workers' compensation system. The legislation required APD to provide consultation services to "encourage voluntary compliance with occupational safety and health laws."

### Consultation and the origin of safety and health management

In 1976, APD adopted rule 1-2-13.1, which required an employer to "take all reasonable means" to ensure that employees work in a safe manner. "All reasonable means" implied that employers needed to examine *how* they were managing safety at their workplaces. Preventing workplace injuries would not happen simply by finding and fixing hazards because the real causes of injuries went deeper – lapses in employee training, management supervision, and management's commitment to safety, for example.

Could employers manage workplace safety just as they managed other aspects of their business?

It was a new concept and, over the next six years, APD explored how Oregon business owners might make that happen. What evolved from that effort was a set of seven core elements – the essential parts of an effective safety and health program that could be adapted to any business. Business owners just needed to take the time and make the effort to implement them. The core elements were:

- ▶ Management leadership
- ▶ Accountability and supervision
- ▶ Employee participation
- ▶ Employee training
- ▶ Hazard identification
- ▶ Hazard prevention
- ▶ Planning and evaluation

APD consultants were largely responsible for teaching Oregon employers how to make these core elements part of their safety and health programs, but the number of employers who received help was still relatively small. Meanwhile, federal OSHA was moving along the same path. OSHA started a new initiative in 1984 called "Inspection Exemption Through Consultation." Employers with documented effective safety and health programs would be exempt from scheduled inspections for one year. APD also adopted the initiative in 1984, which would later become the Safety and Health Recognition Program (SHARP), in 1995.

By 1989, the concept of safety and health management had become a cornerstone of the OSHA and Oregon OSHA outreach efforts (APD

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“If you focus on achieving goals, monitoring performance, and evaluating outcomes, your workplace can progress along the path to higher levels of safety and health achievement.”  
 – OSHA's 2015 draft Safety and Health Program Management Guidelines

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was renamed Oregon OSHA in 1989) through consultative services, the SHARP program, and the Voluntary Protection Program (VPP). The seven core elements became part of OSHA's Safety and Health Program Management Guidelines, drawing on its experience with VPP. In publishing the guidelines, OSHA acknowledged that employers could successfully manage their safety programs if they were conscientious and dedicated to the goal of continuous improvement.

OSHA recently revised the original guidelines and asked the public to comment on a [draft document](#) through Feb 22, 2016. (However, OSHA has not announced a publication date for the final document.) But the underlying concept of self-sufficiency – that conscientious employers can voluntarily comply with workplace safety and health requirements – did not change in the revision.

"The idea is to begin with a basic program and simple goals and grow from there," the draft guidelines note. "If you focus on achieving goals, monitoring performance, and evaluating outcomes, your workplace can progress along the path to higher levels of safety and health achievement." ■



# Short takes

## Cascade Occupational Safety and Health Conference featured keynote speaker Erike Young

By Aaron Corvin

Although they share the same goal of reducing workplace hazards, risk managers and safety officials stay in their respective silos all too often, saddling their organizations with inefficiencies and costs.

The solution: Enterprise Risk Management, a process that bridges the divide by blending the best of what both professionals do to not only curb hazards but also slash an organization's costs and bolster its bottom line.

Those were the upshots of a keynote presentation delivered by Erike Young, a workplace health and safety expert, who spoke during the recent Cascade Occupational Safety and Health Conference in Eugene.

Enterprise Risk Management is no abstract idea. The nimblest organizations are adopting the concept, which is rooted in data and replete with successful examples, according to Young, a vice chairman for the U.S. Technical Advisory Group for ISO 31000 on risk management and global safety manager for Google.

"You've got to have facts to make it work," he said.

Part of what keeps risk managers and safety officials from working together is how they view each other, Young said. Risk managers, concerned with analyzing potential causes of accidents and minimizing their costs, see safety officials as part of their department. Safety officials, focused on identifying hazards and developing methods to control them, look at risk managers as mere purchasers of workers' compensation insurance.



To break down that wall, Young said, safety officials must take the initiative and build relationships with risk managers. That work includes learning to talk about losses in financial terms and showing risk managers how the Enterprise Risk Management model is more effective in reducing risk.

During his PowerPoint presentation, Young showed several examples of the model's successes. Some of those examples involved his previous work as the deputy director of enterprise risk management and director of environment, health, and safety for the University of California.

At the University California, Davis, for example, olive trees were shedding an oily hazard on campus bike paths, leading to accidents and tens of thousands of dollars in legal costs. One impulse would be to cut down the trees. But such a move would have missed the big picture, Young said, not to mention aggravated environmentalists.

Instead, the university took a smarter, more collaborative approach. It conducted a feasibility study that found it could reduce the safety hazard and cut legal costs by harvesting the trees and making a unique campus product: olive oil. That program remains active today.

Enterprise Risk Management is the tool to carry out such programs, Young said. The model breaks down barriers and requires people to get creative. Or, as he put it: "Think different."





## Oregon OSHA adopts rule changes for fall protection

Oregon OSHA has adopted rule changes that lower the construction industry's 10-foot general fall protection trigger height to six feet. The changes also ban the use of slide guards as a sole or primary fall protection system.

Approved on March 1, the changes affect only the requirements in Subdivision 3/M (Fall Protection) and Subdivision 3/E (Personal Protective and Life Saving Equipment). The six-foot fall protection requirement will take effect on Jan. 1, 2017. Beginning Oct. 1, 2017, slide guards will no longer be allowed as a primary fall-protection system.

The changes stem from an October 2015 notice issued to Oregon OSHA by federal OSHA. That notice said the 10-foot fall protection requirement and the option to use slide guards as a primary fall-protection system were not as effective as federal OSHA's requirements.

In drafting changes to existing rules during the summer of 2015, Oregon OSHA took input from an advisory group of leaders in the commercial and residential construction sectors. Following those meetings, Oregon OSHA explained the changes to the public during five hearings held throughout the state in January.

To read documents related to the change in the fall protection trigger height, go to Oregon OSHA Administrative Order 1-2016. To read documents related to the prohibition of slide guards as a sole or primary fall protection system, go to Administrative Order 2-2016.

For more information about the changes, contact Tom Bozicevic, 503-947-7431, [tom.bozicevic@oregon.gov](mailto:tom.bozicevic@oregon.gov), or Jeff Wilson, 503-947-7421, [jeffrey.r.wilson@oregon.gov](mailto:jeffrey.r.wilson@oregon.gov).





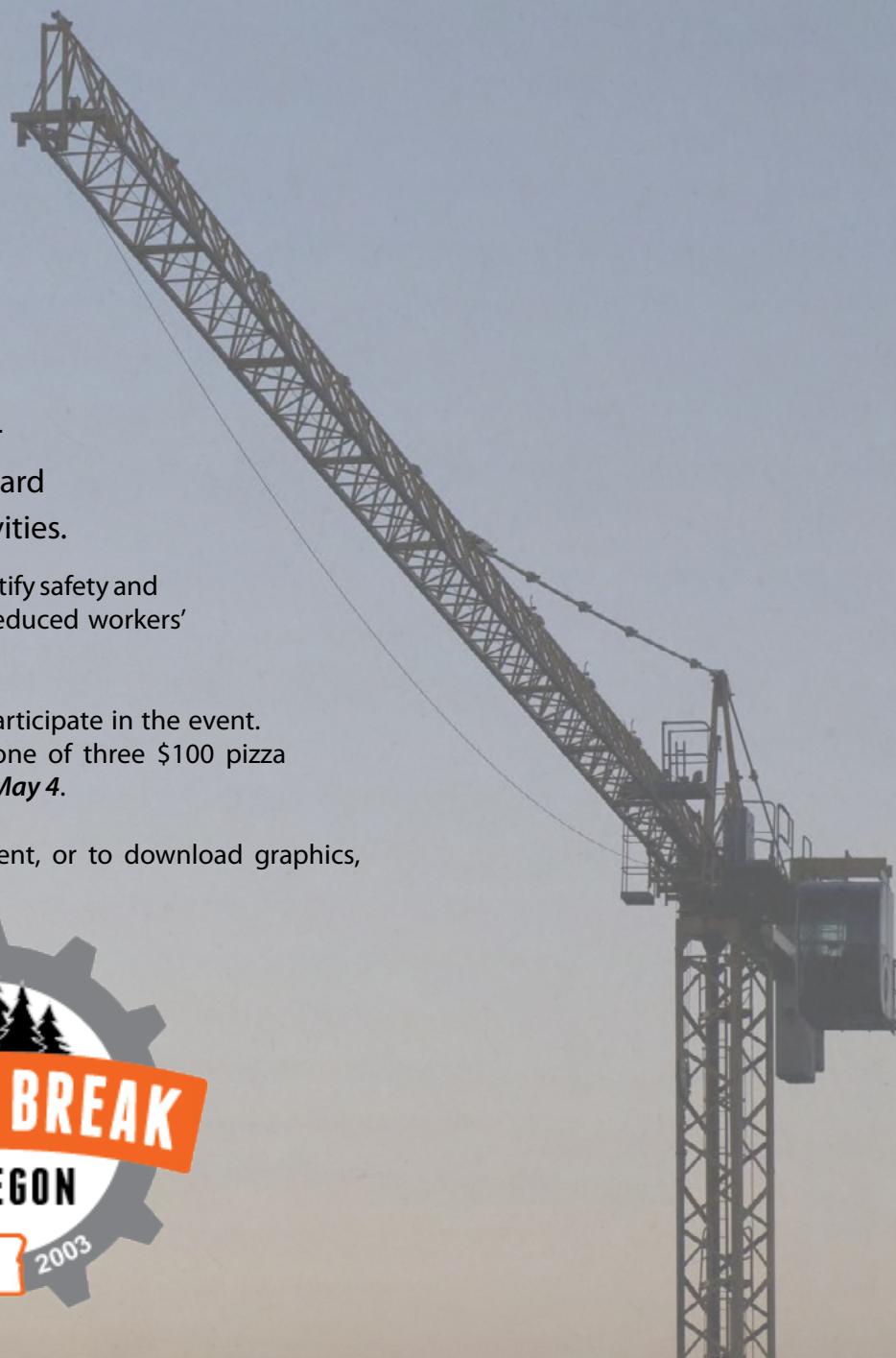
# Take a Safety Break for Oregon!

Oregon OSHA invites employers across the state to participate in the annual Safety Break for Oregon on **Wednesday, May 11**. Safety Break encourages employers to bolster workplace safety and health with training, award recognition gatherings, or other creative activities.

When employees and managers work together to identify safety and health concerns, it can result in fewer injuries and reduced workers' compensation costs for employers.

So far, more than 30 employers have signed up to participate in the event. Employers that participate will be entered to win one of three \$100 pizza luncheons when they [sign up online](#) by *Wednesday, May 4*.

*For more information*, ideas on how to host an event, or to download graphics, visit the [Safety Break for Oregon website](#).





## National Safety Stand-Down puts a spotlight on preventing falls in construction

Efforts to improve workplace safety will intensify next month as federal OSHA and other federal agencies launch the third annual National Safety Stand-Down. The May 2-6 event puts a spotlight on the dangers of falls in the construction industry.

Federal officials aim to prevent fall hazards in construction by raising awareness among employers and workers. The voluntary event provides an opportunity for employers to talk with employees about safety.

Employers may use the stand-down to conduct safety equipment inspections, develop rescue plans, or discuss specific hazards. They're encouraged to plan a stand-down that works best for their workplace.

Out of 4,251 worker deaths in private industry in 2014, 872, or 20.5 percent, were in construction, according to the U.S. Bureau of Labor Statistics. The leading causes of worker deaths on construction sites were falls.

To join the National Safety Stand-Down, visit federal OSHA's website.

*Visit:*

<https://www.osha.gov>

<https://www.osha.gov/StopFallsStandDown/index.html>





## The mysterious case of carbon monoxide and mud



It started out as a typical request for Oregon OSHA industrial hygiene consultant Ryan Hibler. The owner of a small metal fabrication shop was concerned about carbon monoxide in the shop and wanted someone to check the carbon monoxide levels from the shop's forklifts.

As soon as Hibler got to the shop and took his carbon monoxide meter out of the bag, he noticed that it was showing levels that were not dangerous, but much higher than he expected. And the shop's forklifts had not yet been running that day.

He took the meter outside to see if it was giving a false reading, but the level immediately dropped. When he returned to the shop, the level shot back up.

There was an old pellet stove keeping the office warm. Was that the source of the carbon monoxide? No. The level didn't change when he put the meter right next to the stove.

When he walked into the shop's main work area, the carbon monoxide level climbed even higher. Now, it was just above the OSHA eight-hour permissible exposure limit, which meant that employees working an eight-hour shift could be overexposed.

There were two gas-powered heaters overhead. Were they the source? No.

Hibler noticed tiny bubbles coming from a water jet cutter bath. When he put a meter above the bath, the carbon monoxide levels shot up. When he stirred the mud (mostly the mineral garnet, commonly used in water jet cutters) that settled at the bottom of the bath, the carbon monoxide released from the bubbles just above the water's surface rocketed to levels that were high enough to harm a person in a matter of minutes.

The carbon monoxide was coming from the shop's water jet cutter bath. Hibler recommended that the shop routinely run its ventilation system, which would prevent the gas from reaching unsafe levels, but he needed to know what was creating it.

He took bulk samples of mud and water, and then went back to the lab to do a few experiments. Maybe there was a chemical reaction in the tank coming from lubricating oils in the water pump and the air compressor. Maybe the carbon monoxide was produced by the water pump, then dissolved in the tank water and trapped in the mud. Or, maybe something else was happening.

Hibler thoroughly dried the bulk sample of mud and then tested it for carbon monoxide. The results were negative; that made sense because any gas dissolved or trapped in the mud would have

escaped as it was drying. Then he wetted the mud with tap water and waited for 15 minutes. Bingo – carbon monoxide.

So, there was chemical reaction taking place. The gas was being produced in the mud. Was there a living organism involved in the reaction? Hibler added isopropyl alcohol and concentrated bleach to the sample – enough to kill off anything alive – and the carbon monoxide dropped to negligible levels. The reaction appeared to be biological.

To control any possible future carbon monoxide emissions, Hibler recommended that the shop use chlorine tablets and 5 percent to 10 percent bromine in the water jet cutting bath, clean the water jet tank monthly, and regularly run the building's ventilation system to circulate the air. And, as a just-in-case safety measure, he recommended installing carbon monoxide detectors in the shop and training employees how to respond to an alarm.





# Safety Notes

**Four carpenters setting up trusses on a garage were injured when the temporary framework supporting the trusses collapsed.**

The construction crew leader began his workday in the morning by getting ready to set up trusses on a new garage with three of his co-workers. He put on his fall-protection gear and climbed up a ladder to inspect the temporary framework that he built the day before to support the trusses on their sides and keep them from bowing. He built many of these structures without a problem and expected this one to be just like the others. (Temporary frameworks are necessary to support the trusses because garages do not have interior walls.)

The three workers in his crew arrived an hour later. Two of them climbed up on the garage top plate with the crew leader to set up the trusses, but they were not wearing fall-protection gear. The third worker stayed on the ground to hand up tools and supplies.

With the crew leader standing at the center of the first truss and the other two standing on each side, they began raising it. Then, the entire framework collapsed, trapping all four of the workers under the trusses.

When emergency responders arrived, they lifted the trusses off the workers and then rushed the workers to local hospitals. Three of the workers were released later that day following treatment for their injuries. The crew leader was hospitalized for two days so he could recover from injuries to his right leg.

## Accident Report

**Incident:** Truss collapse

**Industry:** Construction

**Employees:** Carpenters







## Findings

The temporary framework was not constructed to hold the weight of the trusses and the workers. The nine trusses on the garage top plate weighed 1,700 pounds and required support across 902 square feet of open horizontal space above the garage. The top of the temporary framework was 12 feet, 10.5 inches above the unfinished garage floor. Truss sets are typically banded and set on the top plate by a crane. However, one of the three sets on the garage top plate was not banded, which concentrated the set's 955 pounds in one area, rather than over the entire temporary framework.

The workers had no formal training on the construction of temporary frameworks. When asked about the workers' training for building temporary frameworks, the company's president said it was not necessary because they had prior experience.

Two of the three workers were working on the temporary framework without fall protection. Measurements taken during the investigation showed the distance between the garage top plate and the unfinished gravel floor was 12 feet, 10.5 inches.

## Applicable standards

**437-003-0915:** "During erection, alteration, or repair, structures were not braced or guyed as necessary to prevent overturning or collapse."

**437-003-1501:** "The employer did not ensure that fall protection systems were provided, installed, and implemented according to the criteria in 1926.502."

**1926.21(b)(2):** "The employer did not instruct each employee in the recognition and avoidance of unsafe conditions... to control or eliminate any hazards..." ■

*Top:* New trusses stacked on temporary framework in a similar setting.

*Bottom:* Collapsed framework and trusses where workers fell.



# Ask Technical

**Q:** Does Oregon OSHA require that a partially exposed shaft on a motor – such as the one in this picture – be completely enclosed with a guard? The gap is too small for a person’s fingers to contact the spinning shaft.

**A:** The entire shaft must be guarded. Even if the gap is too small for a person’s fingers to contact the shaft, loose clothing, lanyards for identification badges, or long hair could get caught. The rule that applies in this case says:

**“All exposed parts of horizontal shafting 7 feet or less from floor or working platform, excepting runways used exclusively for oiling, or running adjustments, shall be protected by a stationary casing enclosing shafting completely or by a trough enclosing sides and top or sides and bottom of shafting as location requires.”**

You will find the rule in [Division 2, Subdivision O, Machinery & Machine Guarding: 1910.219\(c\)\(2\)\(i\), \(Guarding horizontal shafting\)](#).





# Going the Distance

## What sparked your interest in health and safety?

I didn't realize there was a career in occupational safety and health until the advisor of the program at Oregon State University, Dr. Lawson, did a short infomercial about the safety studies program. I was intrigued. This resonated with me because it sounded like it would feed both sides of my brain: creativity plus working with people to feed my right brain, and a technical aspect with rules and regulations to feed my left brain. At one point, my mom told me the story of my Great Auntie Irene, who, in 1939, did her thesis paper for her master's degree on safety. So this calling is in my bone marrow.

**Company:** City of Portland Parks and Recreation

**Health and Safety Manager:** Barbara Aguon, member of American Society of Safety Engineers (ASSE) since 1985

**Workforce:** About 500 employees year-round, with an additional 1,200 to 1,500 workers for summer programs





### What's a typical day like for you in your current position?

Suffice it to say, no two days are ever the same, and I like to say, "Every day is just a walk in the park." Actually, a typical day starts with a good cup of coffee, a very quiet office, and much work to do. I'm an early riser, so I usually get a good head start on the day. A cherished treat is to see the sunrise crest in the east from our 13th floor office in the Portland Building downtown. As the sun comes up, the day unfolds and my plan to pick up where I left off the day before sometimes works out. Other days, my plans are circumvented to deal with an emerging issue at one of our sites, with one of our staff, or in the greater community that affects our services, programs, properties, or staff.

My role encompasses safety evangelism to emotional ministries. By this I mean that I continue to teach the requirements for working safely while also trying to convey the value of working safely. In other words, each individual matters and each person should feel they are worth the time to work safely. Emotional ministries is the softer, more subjective side of my job. It calls upon my capacity to respond to trauma and tragedy that affect our staff, on and off the job. It's about coordinating emotional debriefing and finding resources for staff for particular types of situations that come up in their lives.

I am most proud of our automated external defibrillator (AED) and emergency medical response program. We have a remarkable success rate with the use of AEDs, and we have a fully developed post-incident stress debriefing protocol in place to take care of and support staff members who are involved in critical incidents.

"I continue to teach the requirements for working safely while also trying to convey the value of working safely. In other words, each individual matters and each person should feel they are worth the time to work safely."

— *Barbara Aguon*

As the health and safety director for Portland Parks and Recreation, Barbara Aguon takes on many responsibilities, including teaching a first-aid class.







Photo: Ron Conrad

During a recent first-aid class held at Eastmoreland Golf Course in Portland, Aguon oversaw students as they practiced CPR, a lifesaving technique useful in many emergencies.

### How do you measure success?

Success is when the knowledge and training you share with people reaches their hearts in a way that empowers them to make changes that support a healthy, injury-free lifestyle. Success is when, at the end of the day, you've left it all on the field and can truly feel like you made a difference that day.

Success is when the fruits of your labor literally made the difference in someone living or dying.

### What advice do you have for other safety and health professionals hoping to make a difference?

In short, you can make a difference! Celebrate small, positive changes and take on a marathon mentality that acknowledges you won't get everything done quickly. At the same time, stay focused on moving in the right direction, and it will all come together.

Stay positive. It's contagious. Realize that workers let you into their world, and when you are welcomed into their space, you can learn so much about what they do and how they do it. It is with this understanding that we can work together to make the workplace a safer place each day.

Realize that a team of people can come up with a better solution than any one person. Keep the faith. Follow your passion. Don't let the turkeys get you down. Keep the light at the end of the tunnel lit for all.

Work at keeping a balance in your life between physical health, spiritual growth, mindfulness, and serving others.



**Success is when the fruits of your labor literally made the difference in someone living or dying."**

– Barbara Aguon





Photo: Ron Conrad

Students gathered recently for a first-aid class taught by Aguon. She urges people to take on a “marathon mentality” that sees success in improving workplace safety and health as a long-term project.

Be the leading edge. Don't settle for industry standards. Aim for best practices. Sometimes you have to ruffle some feathers to make the difference that needs to be made. And work with people in a way that shows them that safety can be fun.

Partnerships and collaboration are important, too, as they are means to leverage resources. Step up and into leadership roles in ASSE and other professional opportunities.

People don't remember what you say. They do remember how you made them feel. At the end of the day, lifelong vitality is the possibility we must continue to pursue for all. ■

“ People don't remember what you say. They do remember how you made them feel. At the end of the day, lifelong vitality is the possibility we must continue to pursue for all.”

— Barbara Aguon